

A Reconsideration of the Nearctic *Rhexoza*¹

(Diptera: Scatopsidae)

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The examination of two collections of specimens sent to me for identification by Dr. H. J. Teskey of the Entomology Research Institute of the Canadian Department of Agriculture revealed two new species of the scatopsid genus *Rhexoza*. This has prompted me to reexamine the North American species of this group and has also given me the opportunity to make a decision on the status of the Quatei group of that genus which I described in 1956. I noted in both 1971 and 1972 that this group is certainly distinct from *Rhexoza*, *sensu stricto*.

Swammerdamella, *Rhexoza* and the species constituting the Quatei group are closely related, or at least they share characters not present in other genera. There are also several shared characters with *Coboldia*, so these 4 genera should all be included in the Swammerdamellini. This is a new placement for *Coboldia* since I previously included it in the Scatopsini. However, the large, reniform maxillary palpi; the long, triangular, anterior spiracular plate; the relatively short R complex, ending only slightly beyond the middle of the wing; and the presence of lower epimeral setae all indicate a much closer affinity with *Rhexoza* than with *Scatopse* or *Reichertella*.

The tribe Swammerdamellini, then, consists of *Swammerdamella*, *Rhexoza*, *Coboldia* and the new genus described here.

The genera in this tribe can be readily discriminated by use of the following key.

1. Length of costa between R₁ and R₃ less than or no longer than length of R₁; fork of M no longer than or shorter than stem. Males with abdominal segment 7 concealed in segment 6 *Swammerdamella*
Length of costa between R₁ and R₃ greater than length of R₁; M fork longer than stem; abdominal segment 7 visible in males 2
2. Male with tergum 7 produced posteriorly as a narrow, spatulate process, genitalia with elongate, coiled penis; female with small valvifers on sternum 8, with rounded, bare emargination on posterior margin of sternum 7 *Coboldia*

¹ Paper No. 8846 Scientific Journal Series, Minnesota Agricultural Experiment Station, St. Paul, Minnesota.

- Male with tergum 7 produced posteriorly as a broad triangle, penis small, never coiled; female without posterior emargination on sternum 7 3
3. Male genitalia laterally compressed, tergum 9 produced ventrally in a beak-like process (fig. 6); female with tergum 8 medially divided (fig. 4) *Quateiella*
- Male genitalia not laterally compressed, tergum 9 not produced ventrally; female with tergum 8 entire *Rhexoza*

QUATEIELLA, New Genus

The existence of a super specific taxon for the species included here was first recognized by Cook in 1956. The taxon was then treated simply as the quatei group of the genus *Rhexoza*. I now believe that the group is sufficiently distinct to raise to full generic status. It shares the four characters noted above with the other genera in the Swammerdamellini but the male genitalia are very distinctive. They, in fact, are more like those of some *Reichertella* in the Scatopsini.

DESCRIPTION.—Antennae 10-segmented (8 flagellomeres), about as long as total head height; cardo-stipites rather broad, bandlike, sclerites fused posteriorly and beset with setae on each side; maxillary palpi large, reniform, 0.10–0.13 mm long; occiput setose and microtrichiose; eyes with setae between facets. Thorax with elongate, triangular spiracular sclerite (fig. 1); supraalar setae 8–18, in a single row (fig. 1); preepisternals 7–14; anepisternals 18–28; upper episternals 5–12; subalars 6–12; subspiraculars 3–7; lower epimerals 3–8; pedicellars 1–4; wing venation like that of *Rhexoza* with costal-radial complex ending near middle of wing; M fork long, M1 and M2 diverging to wing margin; setae on costa, radial complex and posterior wing margin; setae rarely on ventral surface of R3, always present on dorsal surface; membrane with dense microtrichia. Abdomen with 7 segments; sterna 1–4 unsclerotized; abdomen setose and microtrichiose; tergum 7 of male posteriorly produced, sternum 7 with modified posterior margin. Genital vesica and apodemes of male small; male genitalia rotated 180°, with only 1 pair of appendages, penis inconspicuous, tergum 9 without processes but produced more or less “beak-like” ventrally. Female genitalia with tergum 8 medially divided, cerci small, no obvious appendages or valvifers, spermatheca spherical to broadly elliptical. Type-species of the genus: *Rhexoza quatei* Cook.

KEY TO ADULTS OF QUATEIELLA

- Tergum 9 of male with dorsally projecting horns; female with sternum 9 bearing 10 or more setae in elongate cluster *miniscula*
- Tergum 9 of male without dorsal horns; female with sternum 9 bearing 5–7 setae near posterior margin only *quatei*

QUATEIELLA QUATEI (Cook), New Combination

Rhexoza quatei Cook, 1956: 8–10.

MALE.—Total length 1.20–1.55 mm; greyish brown to dark blackish brown, dull to feebly shining; halteres dark grey; wings clear, shining. Antennae with

each flagellomere bearing 10–13 setae; cardo-stipites fused posteriorly, each side with 12–15 setae in 2 irregular rows; maxillary palpi large, reniform, 0.11–0.13 mm long; 2 campaniform sensilla on each side of occiput immediately behind eyes and below level of antennae, 1 sensilla laterad of each lateral ocellus. Supraalar setae 8–13; preepisternals 8–12; anepisternals 23–28; upper episternals 5–8; subalars 6–12; subspiraculars 3–5; lower epimerals 4–7; pedicellars 2–3. Wing length 1.00–1.20 mm; R3 extends 0.49–0.53 of total wing length; M1 and M2 divergent to wing margin; setae on costa and R, none on M, only on dorsal side of R3; wing surface with obvious microtrichia. Abdomen with sterna 1–4 unsclerotized, terga all present; terga and sterna setose and microtrichiose; 7 pairs of spiracles; tergum 7 (fig. 2) with 2 stout, setose processes arising from under posterior margin (possibly tergum 8); sternum 7 with deep, triangular emargination posteriorly; genital vesica and apodemes small, 0.12–0.13 mm long. Genitalia in fig. 5.

FEMALE.—Like male in color, structure and chaetotaxy except rather more setose. Each flagellomere with about 8 setae; cardo-stipites with 16 setae on each side. Supraalar setae 8–18; preepisternals 13–14; anepisternals 25–37; upper episternals 5–12; subalars 8–12; subspiraculars 3–7; lower epimerals 6–8; pedicellars 1–2. Wing length 1.30–1.38 mm.

DISTRIBUTION.—Originally described from California: Davis, Riverside, Coachella, Rialto, Anaheim, Olive. A long series of additional specimens has become available from San Bernardino, California, June 6, 1960, reared from *Echinocactus polycephalus*. Earlier records included specimens from Citronella bait traps.

The females reared from *E. polycephalus* seem to be one species only. These were associated with large numbers of males of *quatei* and a few males of *R. ryckmani*. Also associated were even larger numbers of *Coboldia fuscipes* (Mg.).

QUATEIELLA MINISCULA (Cook), New Combination

Rhexoza miniscula Cook, 1956: 10.

MALE.—Total length 1.30–1.74 mm; dark grey brown, feebly shining; halteres dark grey. Antennal flagellomeres each with about 9 setae; cardo-stipites with 11 setae on each side; maxillary palpi 0.10 mm long, reniform; campaniform sensilla as in *Q. quatei*. Supraalar setae 9–11; preepisternals 7; anepisternals 18; upper episternals 7; subalars 8; subspiraculars 5–7; lower epimerals 3; pedicellars 1–4. Wing length 1.00–1.24 mm; R3 .50 total wing length; setae on costa and R, none on M; R3 with only dorsal setae; wing with obvious microtrichia. Abdomen with sterna 1–4 undifferentiated; terga all present; terga and sterna setose and microtrichiose; tergum 7 (and possibly 8) as in *Q. quatei* except posterior processes stouter (fig. 3). Genital vesica and apodemes 0.18 mm long; genitalia as in fig. 6.

FEMALE.—Total length 1.55–1.97 mm; wing length 1.10–1.38 mm; colored as in male. Like the males except some differences in pleural setal counts. Flagellomeres each with 10 setae; cardo-stipites with 14 setae on each side. Supraalar setae 9–10; preepisternals 7; anepisternals 26; upper episternals 7; subalars 7; subspiraculars 7; lower epimerals 1–2; pedicellars 1–2. Genitalia as in fig. 4.

DISTRIBUTION.—Originally described from Virginia, South Carolina and Texas. Additional specimens have been seen from Texas and from Nogales, Arizona.

RHEXOZA Enderlein

Rhexoza Enderlein, 1936: 55; Cook, 1956: 1-12; 1972: 58-61; 1972: 632-634.

Type-species: *Rhexoza zacheri* Enderlein = *Scatopse subnitens* Verrall.

DIAGNOSIS.—Antennae with 8 flagellomeres; maxillary palpi large (0.09–0.18 mm), reniform, sometimes apically acute (“slipper-shaped”); cardo-stipites a band-like sclerite fused posteromedially, bearing several rows of setae; with campaniform sensilla as in *Quateiella*; occiput setose and microtrichiose; eyes with setae between facets. Supraalar setae numerous, a dense row of 9 or more; the usual pleural setae present and some with lower epimeral setae, episternal setae very evident. Wing venation like that of *Coboldia fuscipes* (Mg.) with costal-radial complex ending near middle of wing (0.45–0.57 of total length from base); M fork complete; setae present on costa, R and posterior wing margin only; membrane with short, abundant microtrichia. Abdomen with 7 evident segments in both sexes; male with 7 pairs of spiracles, females with 8; all terga evident, anterior sterna reduced or absent; terga and sterna with microtrichia in addition to setae; segment 7 of male posteriorly modified either on tergum, sternum or both; genital vesica and apodemes small. Male genitalia rotated 180°, with only 1 pair of appendages; tergum 9 without processes; penis stout, conspicuously sclerotized. Female genitalia with tergum 8 large or small, never completely divided longitudinally, cerci large or small, setose; spermatheca spherical to elliptical.

KEY TO THE SPECIES OF RHEXOZA

MALES: (males of *R. borealis* and *R. amaryllis* unknown)

1. With lower epimeral setae (fig. 1); R3 with only dorsal setae 4
Without lower epimeral setae; R3 with dorsal and ventral setae 2
2. Tergum 7 with median notch on posterior margin (fig. 7) *grossa*
Tergum 7 with posterior margin entire 3
3. Genitalia with tergum 9 short, broadly and shallowly incised posteriorly (fig. 13); genital vesica and apodemes short (0.20–0.24 mm); subalar setae 5–6 *incisa*
Genitalia with tergum 9 produced posteriorly, apically rounded (fig. 14), genital vesica and apodemes long (0.35 mm); subalar setae 14 *iowensis*
4. Sternum 7 without posteriorly directed processes; aedeagal plate broadly spatulate (fig. 18) *melanderi*
Sternum 7 with posteriorly directed processes (fig. 8); aedeagal plate absent or narrow, spatulate 5
5. Sternum 7 with a pair of bilobed processes on posterior margin (fig. 8) *similis*
Sternum 7 with 2 simple processes on posterior margin 6
6. Sternum 7 with 2 short, divergent, apically truncate processes on posterior margin (fig. 9); only 1–2 subspiracular setae *aterrima*
Sternum 7 with 2 long, slender processes on posterior margin; subspiracular setae 3 or more 7
7. Penis short; long apically bifurcate aedeagal plate also present (fig. 19) *teskeyi*

Penis sclerotized, longer than penis valves; aedeagal plate absent (figs. 20, 21) *ryckmani*

FEMALES: (female of *R. iowensis* unknown)

1. With lower epimeral setae; R3 with only dorsal setae 4
Without lower epimeral setae; R3 with dorsal and ventral setae 2
2. Tergum 8 medially separated; with a row of stout setae on anterior margin (fig. 22) *grossa*
Tergum 8 deeply emarginate but without anterior setal row 3
3. Tergum and sternum 7 with numerous, small, lobelike processes on posterior margin (fig. 25); sternum 8 with apically narrowed valvifers (fig. 24) *incisa*
Tergum and sternum 7 without posterior processes; sternum 8 with valvifers broadly rounded posteriorly (fig. 27) *borealis*
4. With 10 or more lower epimeral setae; valvifers short, rounded somewhat transverse (fig. 28); spermatheca reniform *amaryllis*
Usually with 6 or fewer lower epimerals; valvifers elongate, not transverse .. 5
5. Subspiracular setae 2-3; spermatheca spherical *aterrima*
Subspiracular setae 6-8 (rarely 4); spermatheca elliptical 6
6. Tergum 8 without spiracles; with median, longitudinal suture on posterior half (fig. 31) *ryckmani*
Tergum 8 with spiracles, no median, longitudinal suture 7
7. Anterior half of sternum 7 densely microtrichiose, devoid of setae ... *teskeyi*
Anterior half of sternum 7 with only a narrow band without setae 8
8. Sternum 8 not produced anteriorly; distinct space between valvifers (fig. 30) *melanderi*
Sternum 8 produced anteriorly as median lobe; valvifers contiguous mesally (fig. 23) *similis*

RHEXOZA INCISA Cook

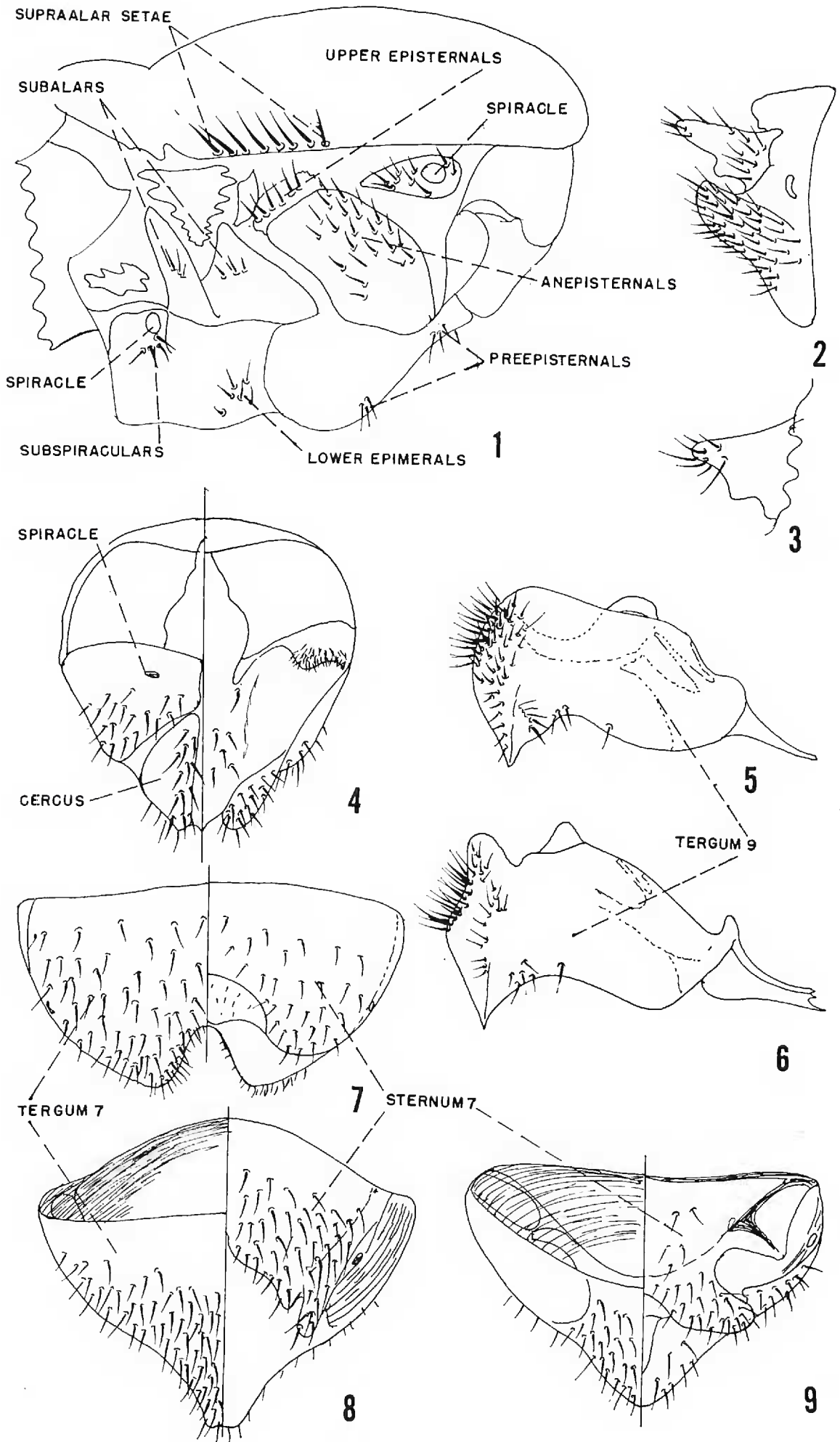
Rhexoza incisa Cook, 1956: 6-7; 1963: 12.

The original description was fairly extensive but additional characters of value will be noted in the following brief description.

MALE.—Very dark blackish brown, dull to feebly shining; halteres grey; total length 1.38-1.86 mm. Cardo-stipites with 10-14 setae on each side; antennal flagellomeres with 12-14 setae in a single irregular whorl; maxillary palpi 0.09-0.12 mm long. Supraalar setae 16-20; preepisternals 6-7; anepisternals 20-25; upper episternals 5-6; subalar setae 5-6; subspiraculars 4-9; lower epimerals absent; pedicellars 1-2. Wing length 1.27-1.60 mm; vein R3 terminates at .53-.56 of

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FIGS. 1-9. Fig. 1. *Quateiella quatei*, thorax; Fig. 2. *Q. quatei*, segment 7, male; Fig. 3. *Q. miniscula* process of segment 7, male; Fig. 4. *Q. miniscula*, female genitalia; Fig. 5. *Q. quatei*, male genitalia; Fig. 6. *Q. miniscula*, male genitalia. Fig. 7. *Rhexoza grossa*, male segment 7; Fig. 8. *R. similis*, male segment 7; Fig. 9. *R. aterrima*, male segment 7.



total wing length; R3 with setae dorsally and ventrally. Abdominal segment 7 with tergum slightly produced posteriorly and sternum posteromedially notched; genital vesica and apodemes 0.20–0.27 mm long; genitalia in fig. 13.

FEMALE.—As in male in color and otherwise except setae of flagellomere up to 15; preepisternal setae 4–5; anepisternal setae 17–18; subalar setae 4–9 and pedicellar setae 2–3; spermatheca nearly spherical; sternum and tergum 7 with seta bearing lobes on posterior margins (fig. 25); genitalia in fig. 24.

DISTRIBUTION.—Minnesota, Iowa, Illinois and Ontario. Larvae have been found in wet areas under the bark of decaying cottonwood, elm and boxelder.

RHEXOZA GROSSA Cook

Rhexoza grossa Cook, 1956: 6

A larger species than *R. incisa*, with a western distribution.

MALE.—Dark blackish brown, somewhat shining, halteres grey; total length 2.38–2.60 mm. Cardo-stipites with 24 setae on each side (more than *incisa*); each flagellomere with about 18 setae in a single whorl; maxillary palpi 0.15–0.16 mm long. Supraalar setae 12–18; preepisternals 16; anepisternals 30; upper episternals 6; subalars 14; subspiraculars 10; lower epimeral 0; pedicellars 2–5; wing length 1.90–1.96 mm; R3 with setae both dorsally and ventrally. Tergum and sternum 7 both with posterior emargination (fig. 7); genital vesica and apodemes 0.29–0.30 mm long. Genitalia in fig. 15.

FEMALE.—As in the male in color and otherwise except cardo-stipital setae 17–22; maxillary palpal length 0.14–0.18 mm; antennal flagellomeres with 14–15 setae. Supraalar setae 11–19; preepisternals 13–17; anepisternals 24–25; upper episternals 5–7; subalars 6–11; subspiraculars 5–12; lower epimerals 0; R3 extending 0.52–0.57 of total wing length. Genitalia in fig. 22; spermatheca nearly spherical.

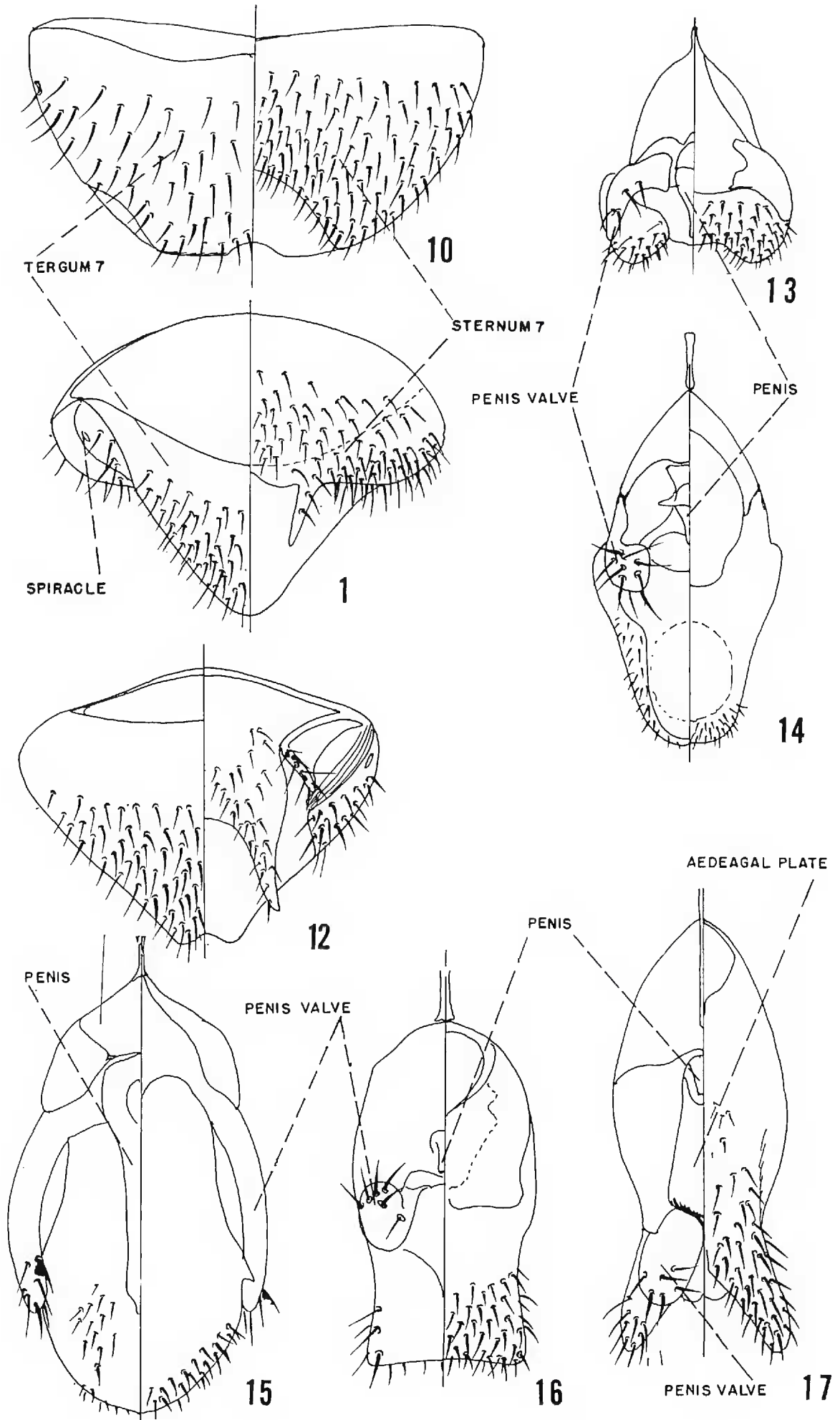
DISTRIBUTION.—California, Oregon, British Columbia (Richter Pass Road, 7 mi. W. Osoyoos, B.C., 2-VI-1958).

Rhexoza iowensis, New Species

MALE.—About 1.75 mm long; dark blackish brown, head and thorax somewhat shining, abdomen dull; halteres grey. Cardo-stipites with 18 setae on each side; maxillary palpi 0.11 mm long; flagellomeres with about 12 setae arranged in a single whorl. Supraalar setae 18; preepisternals 8; anepisternals 33; upper episternals 8; subalars 14; subspiraculars 10; lower epimerals 0; pedicellars 3. Wing length 1.75 mm; R3 extending 0.57 of total length; R3 with dorsal and ventral setae. Abdomen with sterna 1–4 undifferentiated, other sterna and terga present, both setose and microtrichiose; tergum 7 somewhat produced posteriorly,

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FIGS. 10–17. Male terminalia of *Rhexoza*. Fig. 10. *R. owensis*, segment 7; Fig. 11. *R. ryckmani*, segment 7; Fig. 12. *R. teskeyi*, segment 7; Fig. 13. *R. incisa*, genitalia; Fig. 14. *R. iowensis*, genitalia; Fig. 15. *R. grossa*, genitalia; Fig. 16. *R. aterrima* genitalia; Fig. 17. *R. similis*, genitalia.



a broadly truncated triangle with small, shallow posterior emargination medially (fig. 10); sternum 7 with deep posterior emargination; tergum 7 setose but devoid of microtrichia, sternum with setae and sparse microtrichia. Genital vesica 0.35 mm long. Genitalia in fig 14.

FEMALE.—Unknown.

HOLOTYPE MALE: Ames, Iowa, 18-V-1951, W. L. Downes. Type in the University of Minnesota Collections.

Rhexoza borealis, New Species

MALE.—Unknown.

FEMALE.—Very dark grey brown, dull; halteres dark grey, head black; total length 2.25 mm. Antennae short, flagellomeres wider than long, 8 present, each flagellomere with about 12 setae in a single, irregular whorl; 2 campaniform sensilla on occiput on each side below level of antennae, 1 laterad of each lateral ocellus; cardo-stipites with 12 setae on each side in an irregular double row; maxillary palpi large, reniform, 0.11 mm long. Supraalar setae 18; preepisternals 12; anepisternals 26; upper episternals 5; subalars 11; subspiraculars 9; lower epimerals 0; pedicellars 2; wing length 2.00 mm; setae on costa and R but not on M; setae on both dorsal and ventral surfaces of R3; R3 extends 0.58 of total wing length. Abdominal sterna 1-3 absent, other terga and sterna present, both microtrichiose and setose; tergum 7 with straight posterior margin; sternum 7 broadly and shallowly emarginate; genitalia in fig. 27; spermatheca spherical, 0.13 mm in diameter.

HOLOTYPE FEMALE: Umiat, Alaska, 8-VII-1958, J. E. H. Martin. Type in the Canadian National Collections.

RHEXOZA ATERRIMA (Melander)

Rhegmoclema aterrima Melander. 1916: 14 Cook, 1956: 4-5 (*Rhexoza*).

This species is fairly well described in the references cited but the following additional characters should be noted.

MALES.—Dark blackish brown, feebly shining, halteres dark grey; total length 1.50-1.65 mm. Cardo-stipites with 10-15 setae on each side; maxillary palpi 0.09-0.12 mm long; flagellomeres with 12-13 setae in a single whorl. Supraalar setae 10-13; preepisternals 5-7; anepisternals 12-23; upper episternals 6-7; subalars 5-7; subspiraculars 1-4; lower epimerals 3; pedicellars 2; wing length 1.0-1.50 mm; R3 terminating at 0.48-0.50 of wing length; R3 with dorsal setae only. Segment 7 of abdomen with tergum somewhat produced medially; sternum 7 with a pair of setose processes on posterior margin (fig. 9); genital vesica and apodemes 0.17-0.20 mm long. Genitalia in fig. 16.

FEMALE.—Color and structure as in male except 1.35-2.00 mm long; wing length 1.20-1.50 mm. Genitalia in fig. 26.

DISTRIBUTION.—Early collections were from Idaho, Montana and California. I now have 1 male, Hempstead Co., Arkansas 18-X-1957, reared from Bk.Btl. logs [sic]; 1 female, Constance Bay, Ontario, 3-I-1952, from log of Jack pine (I originally misidentified this specimen as *R. similis*). Some Idaho specimens have been taken from *Pinus ponderosa*.

RHEXOZA SIMILIS (Beekey)

Scatopse similis Beekey, 1938: 151-154; Cook, 1956: 6; 1963: 11.

Well described in the original description and by Cook, but some additional characters can be noted.

MALE.—Total length 1.80-2.00 mm; dark blackish brown, feebly shining, halteres dark. Cardo-stipites with 12-14 setae on each side; maxillary palpi 0.10-0.12 mm long; flagellomeres with 14-18 setae each in an irregular whorl. Supraalar setae 16-21; preepisternals 10-15; anepisternals 22-23; upper episternals 7-10; subalars 6-11; subspiraculars 3-7; lower epimerals 4-8; pedicellars 2-4; wing length 1.50-2.00 mm; R3 extending 0.51-0.54 of total wing length; R3 with dorsal setae only. Tergum 7 of abdomen produced posteriorly, often apically truncate; sternum 7 with pair of bilobed, posterior projections (fig. 8); genital vesica and apodemes 0.25-0.30 mm long. Genitalia in fig. 17.

FEMALE.—Total length 1.72-2.20 mm; wing length 1.50-1.70 mm; colored as male; chaetotaxy essentially as in male. Spermatheca elliptical; genitalia in fig. 23.

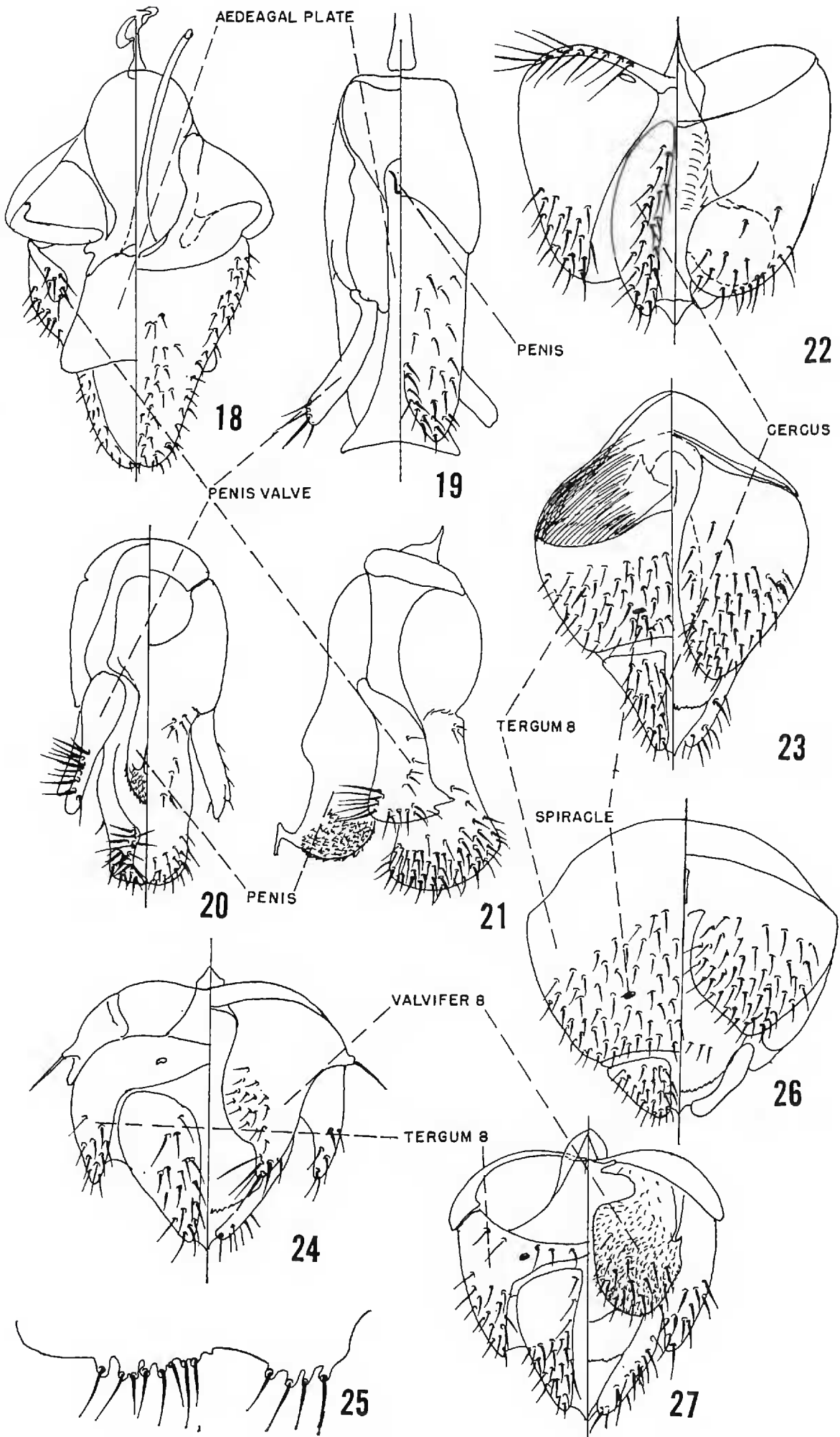
DISTRIBUTION.—Maine, Ontario, Quebec. A single male from Lisadale Lake, British Columbia, 5-VIII-1960, 4000 ft., has extended the range considerably. The latter locality is in the northwestern corner of the province. Both *R. similis* and *R. aterrima* probably occur in the central Canadian provinces as well.

Rhexoza teskeyi, New Species

MALE.—Total length 1.30-1.70 mm; dark greyish brown, head darkest; thorax and head somewhat shining, abdomen dull; halteres grey; antennal flagellomeres each with about 14 setae in a single whorl; cardo-stipites with 10-12 setae on each side; maxillary palpi 0.11-0.12 mm long, reniform; occiput with usual campaniform sensilla. Supraalar setae 15-19; preepisternals 14-15; anepisternals 20-32; upper episternals 6-9; subalars 7-8; subspiraculars 3-5; lower epimerals 4-6; pedicellars 2-3. Wing length 1.40-1.50 mm; R3 extends 0.50-0.52 of total wing length from base; R3 with dorsal setae only. Abdominal sterna 1-3 absent, other terga and sterna present, both densely setose and microtrichiose; tergum 7 produced posteriorly, triangular, with apex shallowly notched (fig. 12); sternum 7 with a pair of long narrow, acute processes posteriorly. Genital vesica and apodemes 0.19-0.20 mm long; genitalia in fig. 19.

FEMALE.—Total length 1.60-1.95 mm; wing length 1.45-1.46 mm; color identical with that of male. Flagellomeres with 11 setae each in a single whorl; cardo-stipites with 16 setae on each side; maxillary palpi 0.12 mm long. Supraalar setae 14; preepisternals 11-13; anepisternals 27-30; upper episternals 6-8; subalars 8; subspiraculars 6-8; lower epimerals 2-3; pedicellars 2-3; wings as in male. Abdominal sterna 1-3 absent, other terga and sterna present; terga and sterna setose and densely microtrichiose; tergum 7 with nearly straight posterior margin; sternum broadly and shallowly emarginate; spermatheca cylindrical to elliptical, 0.20 mm long. Genitalia in fig. 29.

HOLOTYPE MALE: Stonecliffe, Ontario, coll. 12, Aug. 1962, em. 80, Sept. 1962. Ex twigs of red pine. In C.N.C. collections. Paratypes: 6 females, 7 males, 1 larva, 2 pupal skins. Same data as holotype. Types in the Canadian National Collections.



Rhexoza amaryllis, New Species

A single series of teneral adult females as well as a few larvae and pupae collected from decaying amaryllis bulbs was recently referred to me by H. J. Teskey.

MALES.—Unknown.

FEMALES.—Total length about 2.20 mm (specimens in alcohol); color grey brown, dull; halteres grey. Antennae typical, each flagellomere with 14–15 setae in a single whorl; cardo-stipites with 19 setae on each side; maxillary palpi 0.13–0.14 mm long, reniform. Supraalar setae 13; preepisternal setae 9–11; anepisternal setae 35–38; upper episternals 7–9; subalars 8–9; subspiraculars 7–8; lower epimerals 10–13; pedicellars 4. Wings 1.65 mm long; R3 extending 0.53 of total wing length; R3 with setae dorsally only; wing densely microtrichiose. Abdomen with sterna 1–6 undifferentiated; sternum 7 and all terga evident; terga and sternum 7 setose and microtrichiose; tergum and sternum 7 with straight posterior margin; spermatheca reniform, 0.21 mm long. Genitalia in fig. 28.

HOLOTYPE FEMALE: Pt. Credit, Ontario, Nov. 1966, ex. rotting amaryllis bulbs. Paratypes: 3 females, 4 larvae, 2 pupae, with above data. Types in the Canadian National Collections.

Rhexoza ryckmani, New Species

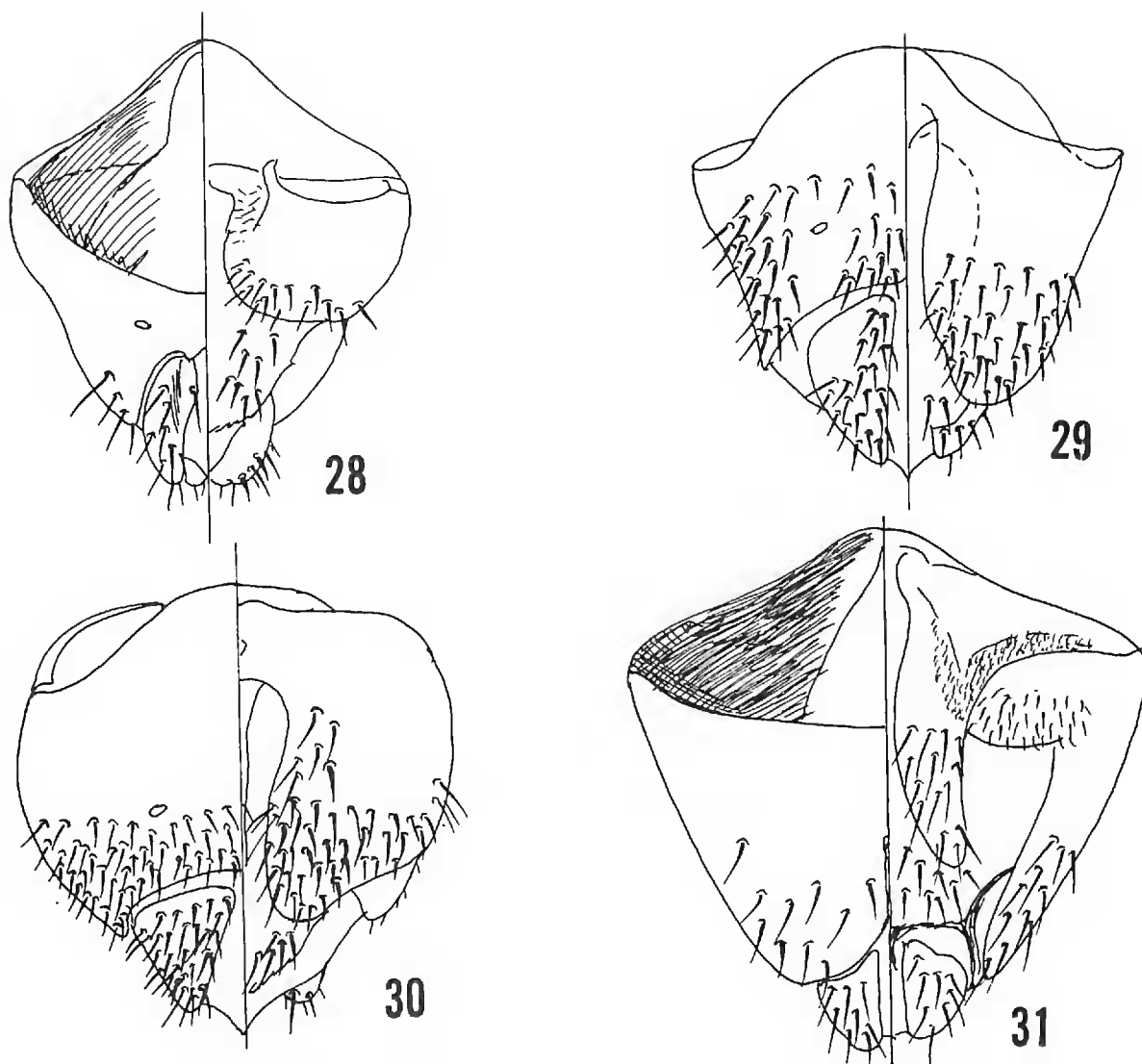
MALES.—About 1.50 mm long; greyish brown to dark blackish brown, dull to feebly shining; halteres dark grey; wings colorless, shining. Antennal flagellomeres with 12–15 setae; cardo-stipites with 12–14 setae on each side; maxillary palpi large, reniform, 0.09–0.12 mm long. Supraalar setae 11–15; preepisternal setae 9–11; anepisternals 23–30; upper episternals 6–8; subalars 6–9; subspiraculars 6–10; lower epimerals 6–10; pedicellars 2–4; wing length 1.20–1.36 mm; R3 terminates from .50–.56 of total wing length; M1 and M2 diverge to wing margin; setae usually on dorsal side only of R3, occasionally a very few on ventral surface; wing microtrichiose. Abdomen with sterna 1–4 undifferentiated, other sterna and terga present, setose and microtrichiose; tergum 7 triangular, produced posteriorly (fig. 11); sternum with 2 elongate, slender processes posteriorly, a small notch medially (fig. 11); genital vesica and apodemes 0.25–0.27 mm long (longer than other species in the genus). Genitalia in figs. 20, 21.

FEMALES.—A single female of this genus was collected in the same locality as a male of *R. ryckmani* although about 1 month earlier (San Dimas Canyon, Los Angeles Co., Calif.). This female is distinct from females of *Quateiella quatei* and it is also distinct from a single female collected in the type locality of *R. melanderi*. The male, female associations of *R. ryckmani* and *R. melanderi*, which follow are certainly tentative, but the association in the case of *Quateiella quatei* would seem to be firmly based.

Generally like the male in size, color and chaetotaxy. Antennal flagellomeres

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FIGS. 18–27. Genitalia of *Rexoza*. Fig. 18. *R. melanderi*, male; Fig. 19. *R. teskeyi*, male; Fig. 20. *R. ryckmani*, dorsal-ventral aspect; Fig. 21. *R. ryckmani*, male, lateral aspect; Fig. 22. *R. grossa*, female; Fig. 23. *R. similis*, female; Fig. 24. *R. incisa*, female; Fig. 25. *R. incisa*, female, posterior margin of tergum 7; Fig. 26. *R. aterrima*, female; Fig. 27. *R. borealis*, female.



FIGS. 28-31. Female genitalia of *Rhexoza*. Fig. 28. *R. amaryllis*; Fig. 29. *R. teskeyi*; Fig. 30. *R. melanderi*; Fig. 31. *R. ryckmani*.

each with 12 setae; cardo-stipites with 18 setae on each side; maxillary palpi 0.15 mm long. Supraalar setae 14; preepisternal setae 10; anepisternals 25; upper episternals 8; subalars 7; subspiraculars 9; lower epimerals 10; pedicellars 4. Spermatheca broadly elliptical, 0.20 mm long; genitalia in fig. 31; tergum 8 not longitudinally divided completely but with a median longitudinal suture on posterior $\frac{1}{2}$.

HOLOTYPE MALE: San Bernardino, San Bernardino Co., Calif, 6-VI-1960, Host *Echinocactus polycephalus*, reared, R. E. Ryckman et al. Paratypes: 3 males, data as above; 1 male, same locality but 24-XI-1957; 1 male, Verdmont, Calif., 1-V-1946; 1 male San Dimas Canyon, Los Angeles Co., Calif., 24-XI-1957; 1 female, San Dimas Canyon, Los Angeles Co., Calif., 10-X-1957. San Bernardino specimens reared in association with numerous *Quateiella quatei* males and females and some *Coboldia fuscipes* (Mg.). Types in the University of Minnesota Collections.

Rhexoza melanderi, New Species

MALES.—Total length 1.50 mm; head and thorax dark brown, feebly shining; abdomen brown dorsally, black ventrally; halteres dark grey brown. Antennal

flagellomeres each with 12 setae in a single whorl; cardo-stipites with 11 setae on each side; maxillary palpi large, reniform, 0.12 mm long. Supraalar setae 14; preepisternals 6; anepisternals 19; upper episternals 5; subalars 8; subspiraculars 8; lower epimerals 4; pedicellars 3; wing length 1.30 mm; R3 terminates at 0.42 of wing length; R3 with setae on dorsal surface only. Abdomen with sterna 1-4 undifferentiated, other sterna and terga present, both setose and microtrichiose; 7 pairs of spiracles; tergum 7 produced posteriorly; sternum 7 expanded laterally and dorsally; genital vesica and apodemes shorter than in preceding species. Genitalia in fig. 18.

FEMALE.—Size and color as in male. Antennal flagellomeres each with 15 setae in a single whorl; cardo-stipites with 12 setae on each side; maxillary palpi 0.11 mm long. Supraalar setae 11; preepisternal setae 8; anepisternals 22; upper episternals 7; subalars 9; subspiraculars 4; lower epimerals 6; pedicellars 1-2; wing length 1.50 mm; R3 extends 0.50 of total wing length. Genitalia in fig. 30. Tergum 8 not divided; spermatheca broadly elliptical, 0.13 mm long.

HOLOTYPE MALE: S. Fk. Santa Ana R. Calif., 1-IX-1946, A. L. Melander. Paratype: female, as above but 18-VI-1945. Types in the U.S. National Museum.

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